Chapter 13

Integrated Readiness Matrix: A Synergy of Pedagogy and Technology for Educational Leadership

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ABSTRACT

This chapter discusses the Integrated Readiness Matrix (IRM), which was developed to identify the current level of teacher skills and competencies along two critical dimensions: pedagogical and technological. The three primary schools of education psychology (behaviorism, cognitivism, and humanism) serve as the theoretical foundation for identifying pedagogical skills, while the Taxonomy for the Technology Domain suggests a new perspective for infusing technology into the classroom. As educational leaders, locating faculty on the X-Y dimensions of this matrix and using their current position as a basis to expand their mastery on both dimensions can serve as a powerful professional development strategy.

INTRODUCTION

Educators are generally in agreement that for technology to be effective, it should be consciously integrated with instruction. However, a walk down most school halls reveals a vastly different reality in the classroom. Teachers at many levels (certainly in post-secondary education) are selected primarily based on their expertise in a particular discipline rather than their accomplishments in pedagogy and technology. They do not receive their certification based upon demonstrated teaching ability. While K-12 faculty in the US are certified by the state in which they teach, current certification requirements do not attest to their ability to integrate pedagogical and technological principles and methods of instruction to obtain verifiable student learning outcomes.
A proper synergy between pedagogy and technology calls for a depth of understanding, appropriate assessment, and a program of professional development that guarantees the proper mix of both. Let’s begin with an examination of pedagogy in an effort to aid educational leaders in the complex amalgamation of theory and practice.

Successful classroom teaching requires that teachers are cognizant of the interplay among the three recognized schools of educational psychology: behaviorism, cognitivism, and humanism. Behaviorism attributes learning to an individual’s interaction with the environment and the consequences of that interaction in terms of reinforcing the strength of learning outcomes. The cognitivist embraces the development of schemata in the brain where the ages and stages of life contribute meaning and potency to the acquisition of new knowledge. The humanist is grounded in the personalization of new knowledge; in the classroom, the focus is less on teaching than it is on learning. Each school of educational psychology has its advocates and preferred classroom applications for promoting success in the discipline of teaching.

Teachers are sometimes dismayed when they find that a particular instructional technique that worked well for a long period of time, does not now capture the attention of current students. While reflection and trial-and-error can sometimes result in improved instruction, it is more often the case that without a repertoire of instructional methods and learning theory to draw upon, pedagogical improvement essentially becomes a hit or miss proposition.

Instructional technology has become increasingly important during the last twenty-five years as educational leaders have come to appreciate how computers, software, and the Internet come together to make instruction “alive” with its integration of graphics, images, movies, and web-based resources. However, just as with pedagogy, there is an uneven application of technology in ways that produce meaningful learning often caused by a lack of technical knowledge of tools, how to apply these tools, and under what conditions they can be most productively used. Consequently, there has not only been an under-utilization of technology, there has also been a great deal of misapplication of these tools in the classroom.

In order to take the first step towards remedying the instructional deficiencies described above, the Integrated Readiness Matrix (IRM) presented in this chapter, allows faculty to determine where they currently place themselves in relation to these two critical components of teaching; namely, pedagogy and technology. The IRM goes beyond identifying the characteristics and predispositions of “integrators” and “non-integrators” of technology as described in much of the literature (Vanatta & Fordham, 2004; Shaunessy, 2007); rather, it provides diagnostic information that faculty development experts and faculty themselves can use to progress simultaneously along both pedagogical and technological dimensions.

The theoretical basis for the integrated readiness matrix includes key characteristics of three schools of educational psychology (behavioral, cognitive, humanist) and suggests strategic applications practiced in many of today’s classrooms by the most effective teachers.

THEORY AND PEDAGOGY

Theoretical Basis for the Integrated Readiness Matrix: Educational Psychology

Behaviorism

Behaviorism purports that individuals learn primarily through the reinforcement of antecedent behavior, the behavior itself, and the consequences of this behavior (Skinner, 1953). Bandura (1977) agreed with this position, but also appended the importance of observing others’ behavior and the outcomes of those behaviors in the environment. “Most human behavior is learned observationally
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